CLAIMS

1. A method for producing release of intracellular material from one or more cells comprising applying a voltage of not more than 50 volts to a suspension containing said cell or cells.

2. A method as claimed in Claim 1, wherein said voltage is from 0.5 to 50 volts.

3. A method as claimed in Claim 1, wherein said voltage is from 0.5 to 15 volts.

4. A method as claimed in Claim 1, wherein said voltage is from 1 to 10 volts.

5. A method as claimed in Claim 1, wherein said voltage is applied between electrodes spaced by no more than 10mm in said suspension.

6. A method as claimed in Claim 5, wherein said voltage is applied between electrodes spaced by no more than 5mm in said suspension.

7. A method as claimed in Claim 6, wherein said electrode spacing is no more than 1.5 mm.

8. A method as claimed in Claim 6, wherein said electrode spacing is no more than 0.5 mm.

9. A method as claimed in Claim 1, wherein said cells are bacterial cells, yeast cells, plant cells, animal cells, insect cells or human cells.

10. A method as claimed in Claim 1, wherein said voltage is applied for a period of at least 30 seconds.

11. A method as claimed in Claim 10, wherein said voltage is applied for a period of at least 2 minutes.

12. A method as claimed in Claim 11, wherein said voltage is applied continuously for a said period.

13. A method of producing single stranded nucleic acid which comprises releasing double stranded nucleic acid from cells by applying a voltage of not more than 50 volts to a suspension of said cells with an electrode to release nucleic acid from said cells and denaturing the double stranded nucleic acid by applying the same or a different voltage to said suspension with said electrode to convert said double stranded nucleic acid to single stranded nucleic acid.

14. A method as claimed in Claim 13, wherein to produce said denaturation, a voltage of from 0.5 to 3 volts is applied.

15. A method as claimed in Claim 13, wherein to produce said denaturation, a voltage of from 1.5 to 2.5 volts is applied.

16. A method as claimed in Claim 13, wherein the denaturation is conducted in the presence of a promoter which assists denaturation.

17. A method as claimed in Claim 16, wherein said promoter compound is methyl viologen or a salt thereof or is a multivalent inorganic cation.

18. A process of amplifying a target sequence of nucleic acid comprising denaturation, hybridisation, and replication of nucleic acid wherein the nucleic acid is released from a cell by a method comprising applying a voltage of not more than 50 volts to a suspension containing said cell or cells,

and said denaturation is conducted by subjecting a solution containing said nucleic acid to a voltage applied between electrodes for a period of up to 2 minutes under conditions such as to covert at least a portion of the nucleic acid to a wholly or partially single-stranded form in the solution.

19. An amplification process as claimed in Claim 18, wherein the amplification procedure is PCR or LCR.

20. A process for replicating a nucleic acid which comprises: releasing double stranded nucleic acid from cells by a method comprising applying a voltage of not more than 50 volts to a suspension containing said cell or cells, separating the strands of a sample double-stranded nucleic acid in solution under the influence of an electrical voltage applied to the solution from an electrode; hybridising the separated strands of the nucleic acid with at least one oligonucleotide primer that hybridises with at least one of the strands of the denatured nucleic acid; synthesising an extension product of the or each primer which is sufficiently complementary to the respective strand of the nucleic acid to hybridise therewith; and separating the or each extension product from the nucleic acid strand with which it is hybridised to obtain the extension product.

21. A process for detecting the presence or absence of a predetermined nucleic acid sequence in a cell which comprises: releasing nucleic acid from the cell by a method comprising applying a voltage of not more than 50 volts to a suspension containing said cell or cells, denaturing released double-stranded nucleic acid by means of a voltage applied to the nucleic acid; hybridising the denatured nucleic acid with an oligonucleotide probe for the sequence; and determining whether the said hybridisation has occurred.